

## CSC 501 FINAL EXAMINATION STUDY GUIDE

PROFESSOR GODFREY C. MUGANDA

The exam will concentrate on programming skills and not so much on definitions.

Make sure you understand all the programs that you had to do for homework projects. Also, all the code examples in lecture that did not involve GUI: make sure you understand all those.

Here are some exercises:

- (1) Visit

```
http://gcmuganda.faculty.noctrl.edu/  
classes/Winter15/160/Lab4-1/HtmlPage.htm
```

and do the Lab 4-1 Length of Names Assignment.

- (2) Without using any library methods of the `Math` or any other class, write a method

```
int squareRoot(int number)
```

that returns the integer square root of non-negative number. If the number is not a square, the method should return -1.

For example, the method returns 3 when `number` is 9; but returns -1 when `number` is 10 because 10 is not a perfect square.

- (3) Be able to write a method

```
boolean isPrime(int number)
```

that determines whether an integer is prime.

- (4) Given an positive integer, print out the sequence of all prime factors of the number. For example, if the number is 18, print out 2, 3. If the number is 42, print out 2, 3, 7. If the number is 13, just print out 13.
- (5) Be able to do all the operations on array we worked with in class lecture and programs: checking two arrays for equality, reversing the order of elements in an array, searching an array using linear and binary search, sorting an array, etc.
- (6) Know how to use the `String` and `StringBuilder` classes for simple string manipulations.